## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 1 September 2005 (01.09.2005)

**PCT** 

## (10) International Publication Number WO 2005/080397 A2

(51) International Patent Classification<sup>7</sup>: C07D 487/00

(21) International Application Number:

PCT/US2005/005218

(22) International Filing Date: 17 February 2005 (17.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/545,580 19 February 2004 (19.02.2004) US

(71) Applicants (for all designated States except US): AS-TRAZENECA AB [SE/SE]; SE-151 85 Södertälje (SE). NPS PHARMACEUTICALS, INC. [US/US]; 383 Colorow Drive, Salt Lake City, UT 84108 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): JOHANSSON, Martin [SE/SE]; c/o AstraZeneca R & D Headquarters, Global Intellectual Property, SE-151 85 Södertälje (SE). WENSBO, David [SE/SE]; c/o AstraZeneca R & D Headquarters, Global Intellectual Property, SE-151 85 Södertälje (SE). MINIDIS, Alexander [SE/SE]; c/o AstraZeneca R & D Headquarters, Global Intellectual Property, SE-151 85 Södertälje (SE). STAAF, Karin [SE/SE]; c/o AstraZeneca R & D Headquarters, Global Intellectual Property, SE-151 85 Södertälje (SE). KERS, Annika [SE/SE]; c/o AstraZeneca R & D Headquarters, Global Intellectual Property, SE-151 85 Södertälje (SE). EDWARDS, Louise [CA/CA]; c/o NPS Allelix Corp., 6850 Goreway Drive, Mississauga, Ontario L4V 1V7 (CA). ISAAC, Methvin [CA/CA]; c/o NPS Allelix Corp.,

6850 Goreway Drive, Mississauga, Ontario L4V 1V7 (CA). **STEFANAC, Tomislav** [CA/CA]; c/o NPS Allelix Corp., 6850 Goreway Drive, Mississauga, Ontario L4V 1V7 (CA). **SLASSI, Abdelmalik** [CA/CA]; c/o NPS Allelix Corp., 6850 Goreway Drive, Mississauga, Ontario L4V 1V7 (CA). **MCLEOD, Donald** [US/US]; c/o NPS Pharmaceuticals, Inc., 383 Colorow Drive, Salt Lake City, UT 84108 (US).

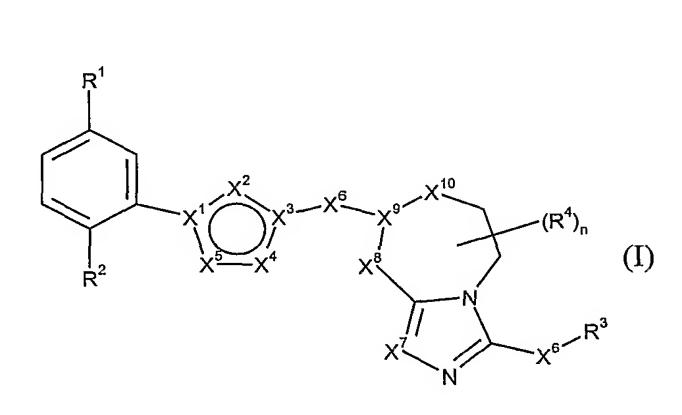
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## **Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FUSED HETEROCYCLIC COMPOUNDS AND THEIR USE AS METABOTROPIC GLUTAMATE RECEPTOR ANTAGONISTS



(57) Abstract: The present invention is directed to compounds of formula (I): Wherein X<sup>1</sup>, X<sup>2</sup>, X<sup>3</sup>, X<sup>4</sup>, X<sup>5</sup>, X<sup>6</sup>, X<sup>7</sup>, X<sup>8</sup>, X<sup>9</sup>, X<sup>10</sup>, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, and n are as defined for formula I in the description. The invention also relates to processes for the preparation of the compounds and to new intermediates employed in the preparation pharmaceutical compositions containing the compounds, and to the use of the compounds in therapy.